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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,975	01/26/2006	In-hwan Choi	285040US0PCT	9519
22850	7590	11/12/2008	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			TRAN, BINH X	
			ART UNIT	PAPER NUMBER
			1792	
			NOTIFICATION DATE	DELIVERY MODE
			11/12/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/565,975	Applicant(s) CHOI, IN-HWAN	
	Examiner Binh X. Tran	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 1, the examiner is unable to find the proper support for the new limitation "Group IIIB" and "Group VIB". It is well known in chemistry that Group IIIB comprises element Sc, Y, La and Ac; and Group VIB comprises element Cr, Mo, W and Sg. The examiner clearly recognizes that applicants disclose to use the element Ga, In, which belong to Group IIIA; and to use element Se and Te, which belong to Group VIA. However, the applicants never disclose to use element in Group IIIB and Group VIB.

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "forming a thin film of an I₂-VI compound on the thin film of the III-VI by Metal Organic Chemical Vapor Deposition employing a precursor containing at least one metal of Group I", does not reasonably provide enablement for "thereby forming a compound of the element from Group I, III, and VI

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which is symbolized by the formula: I-III-VI₂". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. Specifically, in claim 1, step (ii) the applicants recite the step of forming a thin film of an I₂-VI compound. However, in the same step (ii), applicants discloses the result is produced a compound of the formula I-III-VI₂. It is impossible to "form the thin film of an I₂-VI" in step (ii) then produce a compound having a formula "I-III-VI₂" in the same step (ii).

Claims 2-8 are rejected under 35 U.S.C. 112, first paragraph because they directly or indirectly depend on claim 1.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 -8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the applicants disclose two different steps which produce a layer having a formula I-III-VI₂. First, in step (ii), applicants disclose "thereby forming a compound of the elements from Groups I, III, and VI which is symbolized by the formula: I-III-VI₂" (See 35 USC 112, 1st paragraph rejection above). Second, in step (iii), the applicants again recite "forming a thin film of the I-III-VI₂". It is unclear that the compound I-III-VI₂ in step (ii) and the compound "I-III-VI₂" in step (iii) are the same layer or not.

Claim 2 recites the limitation "the third step" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation "the third step" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 and 10 are indefinite because it is unclear what the symbol "x" represents in the formula and what the possible value or range for symbol "x".

Claims 2-8 are rejected under 35 U.S.C. 112, second paragraph because they directly or indirectly depend on indefinite claim 1.

Allowable Subject Matter

5. Claim 9 is allowed.

6. Claim 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Respect to the examiner's previous objection to the specification, the applicant's amendment along with the remark filed on 7-31-2008 is sufficient to overcome the previous objection.

Respect to claims 1-8, the applicant's amendment filed on 7-31-2008 along with the remark raise new ground of rejections under 35 USC 112, 1st paragraph and 2nd paragraph as discussed above. First, the examiner is unable to find support by the new limitation "Group IB" and "Group VIB" in the specification. Second, it is impossible to "form the thin film of an I₂-VI" in step (ii) then produce a compound having a formula "I-

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III-VI₂" in the same step (ii) (Please see the rejection under 35 USC 112, 1st paragraph above for further detail). Third, applicants amendment results in a new ground of rejection under 35 USC 112, 2nd paragraph as discussed above.

Respect to claims 9-12, the applicant's amendment along with the remark filed on 7-31-2008 is sufficient to overcome the examiner previous ground of rejection under 35 USC 112, 1st paragraph

Respect to the rejection of claim 7 under 35 USC 112, 2nd paragraph, the applicants state "the value of the subscript ranges from zero to less than 1 so that subscript simply indicates the amount of added element in relation to the amount of In in a given product compound. This value can vary, and, in fact, changes in relationship to the amount of time in which the additional element is incorporated in the thin film product". This argument is not commensurate with the scope of claim 7. There is no limitation in claim 7 which recites the range for symbol "x". Thus, the examiner still maintains the previous ground of rejection with respect to claim 7.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh X. Tran whose telephone number is (571) 272-1469. The examiner can normally be reached on Monday-Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Binh X Tran

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Primary Examiner
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/Binh X Tran/
Primary Examiner, Art Unit 1792